What is claimed is:

1. A device, comprising:

a photodiode which is sensitive to a wavelength of light;

a first source of photons at a first wavelength to which the photodiode is sensitive incident on the photodiode;

a second source of photons at a second wavelength to which the photodiode is insensitive incident on the photodiode;

an electric field across the photodiode in excess of a breakdown voltage thereof and configured to result in an avalanching of electrons in the photodiode when the photons from the first source strike the photodiode, the avalanching electrons resulting in a photorefractive response which changes the index of refraction in the photodiode; and

a capture device in optical communication with and configured to capture light reflected from the photodiode.

2. The device of claim 1 wherein the first source of photons transmits an optical signal to the photodiode.

3. The device of claim 1 wherein the first wavelength is less than the bandgap of the photodiode.

4. The device of claim 1 wherein the second wavelength is greater than the bandgap of the photodiode.

5. The device of claim 1 wherein the light reflected from the photodiode is modulated by the photoreactive response of the photodiode.

6. The device of claim 1 further comprising a beam combiner configured to combine the first and second wavelengths, the beam combiner positioned between the photon sources and the photodiode.

7. The device of claim 1 further comprising at least one optical filter positioned between the photon sources and the photodiode.

8. The device of claim 7 wherein the optical filter comprises a $\frac{\lambda}{4}$ plate.

9. The device of claim 1 wherein the capture device comprises at least one device selected from the group consisting of cameras, CCD devices, imaging arrays, and photometers.

10. The device of claim 1 further comprising at least one optical component positioned between at least one of the photon sources and the photodiode.

11. The device of claim 10 wherein the at least one optical component is selected from the group consisting of wavelength filters, spatial filters, shutters, light modulators, light valves, lens, lens systems, and objectives.

12. The system of claim 1 wherein the photodiode further comprises an InGaAsP photodiode.

13. The device of claim 1 wherein the photodiode is configured to operate in Geiger mode.

14. A device, comprising:

an InGaAsP photodiode which is sensitive to a wavelength of light;

a first source of photons configured to transmit an optical signal at a first wavelength to which the photodiode is sensitive incident to the photodiode;

a second source of photons at a second wavelength to which the photodiode is insensitive incident on the photodiode;

an electric field across the photodiode in excess of a breakdown voltage thereof and configured to result in an avalanching of electrons in the photodiode when the photons from the first source strike the photodiode, the avalanching electrons resulting in a photorefractive response which changes the index of refraction in the photodiode; and

a capture device in optical communication with and configured to capture light reflected from the photodiode.

15. The device of claim 14 wherein the first wavelength is less than the bandgap of the photodiode.

16. The device of claim 14 wherein the second wavelength is greater than the bandgap of the photodiode.

17. The device of claim 14 wherein the light reflected from the photodiode is modulated by the photoreactive response of the photodiode.

18. The device of claim 14 further comprising a beam combiner positioned between the light sources and the photodiode.

19. The device of claim 14 further comprising a polarizing plate positioned between the light sources and the photodiode.

20. The device of claim 14 wherein the capture device comprises a camera.

21. The device of claim 14 wherein the photodiode is configured to operate in Geiger mode.

22. A system, comprising:

an InGaAsP photodiode having a bandgap, the photodiode configured to operate in Geiger mode;

a first photon source configured to emit an optical signal of a first wavelength, the first wavelength less than the bandgap of the photodiode;

a second photon source configured to emit light of a second wavelength, the second wavelength greater than the bandgap of the photodiode;

a beam combiner positioned within an optical path and configured to combine the first and second wavelengths;

an electric field applied across the photodiode greater than a breakdown voltage thereof, the electric field configured to result in avalanching of electrons in the photodiode when photons from a first photodiode are incident thereon, the avalanche of electrons resulting in a photorefractive response within the photodiode; and

a capture device in optical communication with and configured to capture modulated light reflected from the photodiode.

23. A method, comprising:

baising a photodiode to operate in Geiger mode;

irradiating a photodiode with a first wavelength of light to which the photodiode is sensitive, the first wavelength of light transmitting an optical signal;

irradiating the photodiode with a second wavelength of light to which the photodiode is insensitive;

modulating light reflected from a surface of the photodiode with a photorefractive reaction within the photodiode; and

capturing the modulated reflected light.

24. The method of claim 23 further comprising filtering the modulated reflected light prior to capture.

25. A method comprising

configuring a photodiode to operate in Geiger mode;

irradiating a photodiode with the first wavelength of light transmitting an optical signal;

initiating a photorefractive reaction within the photodiode with a first wavelength of light;

irradiating the photodiode with a second wavelength of light to which the photodiode is insensitive;

modulating light reflected from a surface of the photodiode with the photorefractive reaction within the photodiode; and

capturing the modulated reflected light.